

Work Order ID 75542

Monday, October 24, 2011 3:18:48 PM

75542

Ship Nov *[Signature]* Page 1

Item ID: D212-664-207 Accept *N900040100* Setup Start *NS1*
 Revision ID: Stop *NS2*
 Item Name: Crosstube Low Standard Aft
 Start Date: 10/25/2011 Start Qty: 1.00 *1* Cust Item ID:
 Required Date: 11/4/2011 Req'd Qty: 1.00 *1* Customer:
 Reference:

Approvals: Process Plan: *MF* Date: 11-10-24 Tooling: Date: Run Start *NR1*
 QC: Date: SPC (Y/N): Date: Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr	Revision Nbr
D212-664-247	Rev B (DEO)

100 0.00
 100 DOCUMENT CONTROL
 DC Memo 0.00
 Document Control Photocopy bluefile and create labels as per PPP D212-664-207 CHG002

[Signature] 11-11-02 ①
 JFARMLEY 11-11-02

110 0.00
 110 Pick Kit
 Packaging Packaging Memo 0.00

JW/mo 11-10-26

120 0.00
 120 BENDING MACHINE - CROSSTUBES
 CNC Bend 2 Memo 0.00
 CNC Alpha 160 Bender Bend tube as per Dwg D212-664-247 using CNC bender program and Folio FT

JW/mo 11-10-26

Work Order ID 75542***75542***

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Monday, October 24, 2011 3:18:49 PM

Item ID: D212-664-207

Accept

N900040100Setup Start ***NS1***

Revision ID:

Item Name: Crosstube Low Standard Aft

Stop ***NS2***

Start Date: 10/25/2011 Start Qty: 1.00

1

Cust Item ID:

Required Date: 11/4/2011 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

130

QC15- Crosstube Dimensional Check

0.00

8/10/26

130

QC

Memo

0.00

Quality Control

140

Crosstubes

0.00

140

Crosstubes

Memo

0.00

Crosstubes

1-Drill Rivet holes as per Dwg D212-664-247 using DT8972.***Use T-Pin***

2-Drill pilot holes in tube as per Dwg D212-664-247 using DT8550 and DT8551

3-Ream hole to finish size in tube as per Dwg D212-664-247

4-Deburr & Inspect for surface damage. Repair damage within limits as per Dwg D212-664-247

5-Scribe part # and batch # using vibrating stylus as per Dwg D212-664-247

11-10-27

Work Order ID 75542***75542***

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Monday, October 24, 2011 3:18:49 PM

Item ID: D212-664-207

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N900040100Setup Start ***NS1***

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Start Date: 10/25/2011 Start Qty: 1.00

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Required Date: 11/4/2011 Req'd Qty: 1.00

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Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
180	Outsource process - NDT per QSI038 4.1	0.00							
180									
Outsource2	Memo	0.00							
Outsource process - NDT	Liquid Penetrant Inspection as per QSI 038 Issue P/O: <u>15287</u> LPI as per ASTM 1417 Level 2 Attach copy of NDT results to work order								<u>CX 11/10/28</u> (1)
190	Receive & Inspect for Damage & Mat'l Certs	0.00							
190	Packaging								
Packaging	Memo	0.00							
Packaging	Ensure copy of NDT results attached to work order.								<u>Puff 11/10/28</u> (1)
200	QC5- Inspect part completeness to step on W/O	0.00							
200									
QC	Memo	0.00							
Quality Control	Inspect for damage & ensure results are as per Dwg D212-664-207								<u>BT 11 10-28</u> BT 11 10-28

75542

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N900040100

Setup Start *NS1*

Stop *NS2*

Start Date: 10/25/2011 **Start Qty:** 1.00 ***1***

Cust Item ID:

Required Date: 11/4/2011 **Req'd Qty:** 1.00 *** 1 ***

Customer:

Reference:

Approvals: _____ **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____

Run Start *NR1*

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop *NR2*

**Insp.
Stamp**

210

Crosstubes

Crosstubes

Memo

Crosstubes

1-Rivet and assemble Cuffs with T-Pin in the through bolt holes as per Dwg D212-664-247. with Sika flex in Between tube & Cuff

A/R SIKAFLEX -241/-291 BATCH: 119339

215

215

QC

Quality Control

QC5- Inspect part completeness to step on W/O

0.00

Memo

0.00

Inspect cuff with T-Pin

25 11-10-28

11. 11. 01 (1)

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Item ID: D212-664-207

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Required Date: 11/4/2011 Req'd Qty: 1.00

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Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

220

Spray Painting per QSI005 4.2

0.00

220

SprayPaint

SprayPaint

Memo

0.00

Spray Painting

1-Prime inside and outside crosstube as per QSI 005 4.2

2-Paint outside crosstube with White Imron as per QSI 005 4.2

PRIME:

Start Time: 7:00Finish Time: 8:00

PAINT:

Start Time: 12:00Finish Time: 1:00RT 11-10-29

230

QC14- Inspect Spray Paint

0.00

230

QC

Memo

0.00

Quality Control

Wrap in plastic bag to protect from scratches

11/10/31 (1)

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Required Date: 11/4/2011 Req'd Qty: 1.00

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Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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240

0.00

240

Crosstubes

Crosstubes

Memo

0.00

Crosstubes

1- Assemble as per Dwg D212-664-247

1-Abrade mating surfaces of support and crosstube with 400 grit sandpaper,
clean the area with 4105S wash 'n' wipe

2-Install supports with Proseal 890 per DSI9563 and QSI 015

A/R Proseal 890 Batch: 118234

3- Torque bolts as per dwg

87 11-11-01

250

QC5- Inspect part completeness to step on W/O

0.00

250

QC

Memo

0.00

Quality Control

11 11-11-02 ①

Work Order ID 75542***75542***

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Monday, October 24, 2011 3:18:49 PM

Item ID: D212-664-207

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N900040100Setup Start ***NS1***

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Item Name: Crosstube Low Standard Aft

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Cust Item ID:

Required Date: 11/4/2011 Req'd Qty: 1.00

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Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

255

Pick Kit

0.00

255

Packaging

Memo

0.00

Packaging

260

QC4- 100% Inspect kits for completeness

0.00

260

QC

Memo

0.00

Quality Control

270

Packaging

0.00

270

Packaging

Memo

0.00

Packaging

Identify and pack for shipping as per PPP D212-664-207

Work Order ID 75542***75542***

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N900040100Setup Start ***NS1***

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Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

280

QC21- Final Inspection - Work Order Release

0.00

280

QC

Memo

0.00

Quality Control

11/11/02
MF
11-11-02

Picklist Print

Monday, October 24, 2011 3:18:48 PM

Page 1

Work Order ID: 75542
 Parent Item: D212-664-207
 Parent Item Name: Crosstube Low Standard Aft

Start Date: 10/25/2011

Required Date: 11/4/2011

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP Rev:A New Issue 07.09.12 EC verified by: JLM
 IPP Rev:B ECN 1100p 08-01-11 DD verified by: EC
 IPP Rev:C ECN 1121 08-02-25 DD verified by: eC
 IPP Rev: D QC5 replaced by QC15 at step 5 KJ. Verified by: ec

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D212-664-207TRNRevA Crosstube Turning Detail		Manufactured	No	B74575		110	Each	0.0000	1	1		JW 11-10-26	
D3660-1 CUFF		Manufactured	No			140	Each	16.0000	2	2		BT 11-10-26	
				<u>Location</u>		<u>Loc Qty</u>	<u>Loc Code</u>						
				ST477		10							
				53501		1							
				62225		9		x2					
				ST482		6							
				71858		6							
CR3212-4-06 CHERRY RIVET		Purchased	No			220	Each	730.0000	44	44		RS 11-10-28	
				<u>Location</u>		<u>Loc Qty</u>	<u>Loc Code</u>						
				ST311		730							
				112492		18							
				112794		712		x44					
D3595-063-530 RUBBER CUSHION		Manufactured	No			240	Each	112.0000	4	4		BT 11-11-01	
				<u>Location</u>		<u>Loc Qty</u>	<u>Loc Code</u>						
				LG		100							
				70067		28							
				72745		72		x4					
				LG055		12							
				63407		6							
				67185		6							

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist-Print

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Work Order ID: 75542

Parent Item: D212-664-207

Start Date: 10/25/2011

Required Date: 11/4/2011

Parent Item Name: Crosstube Low Standard Aft

Start Qty: 1.00

Required Qty: 1.00

D2940-1 Support Manufactured No 240 Each 15.0000 2 2 11-11-05

Location Loc Qty Loc Code

LG052 15

71308 15

MS21920-28 Clamp(per MIL-DTL-8783C) Purchased No 240 Each 124.0000 4 4 11-11-05

Location Loc Qty Loc Code

FG 5

105884 5

LG050 119

116839 2

118713 17

119285 100

D3428-1 Placard Manufactured No 255 Each 23.0000 1 1

Location Loc Qty Loc Code

ST053 23

72048 3

73498 20

MS21042L6 Nut Purchased No 255 Each 1,744.0000 6 6

Location Loc Qty Loc Code

ST300 744

117677 88

118384 8

118927 48

118968 600

ST518 1000

119075 1000

AN960JD616 Washer NAS1149D0663J Purchased No 255 Each 0.0000 18 18

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Shop Packet Print

Page 2

Picklist-Print

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Page 3

Work Order ID: 75542

Parent Item: D212-664-207

Start Date: 10/25/2011

Required Date: 11/4/2011

Parent Item Name: Crosstube Low Standard Aft

Start Qty: 1.00

Required Qty: 1.00

AN6-40A Purchased No 255 Each 63.0000 4 4

Bolt

Location

Loc Qty

Loc Code

ST342

63

117688

13

118422

50

Purchased

No

255

Each

34.0000

2

AN6-41A

Bolt

Location

Loc Qty

Loc Code

ST142

34

117366

14

118451

20

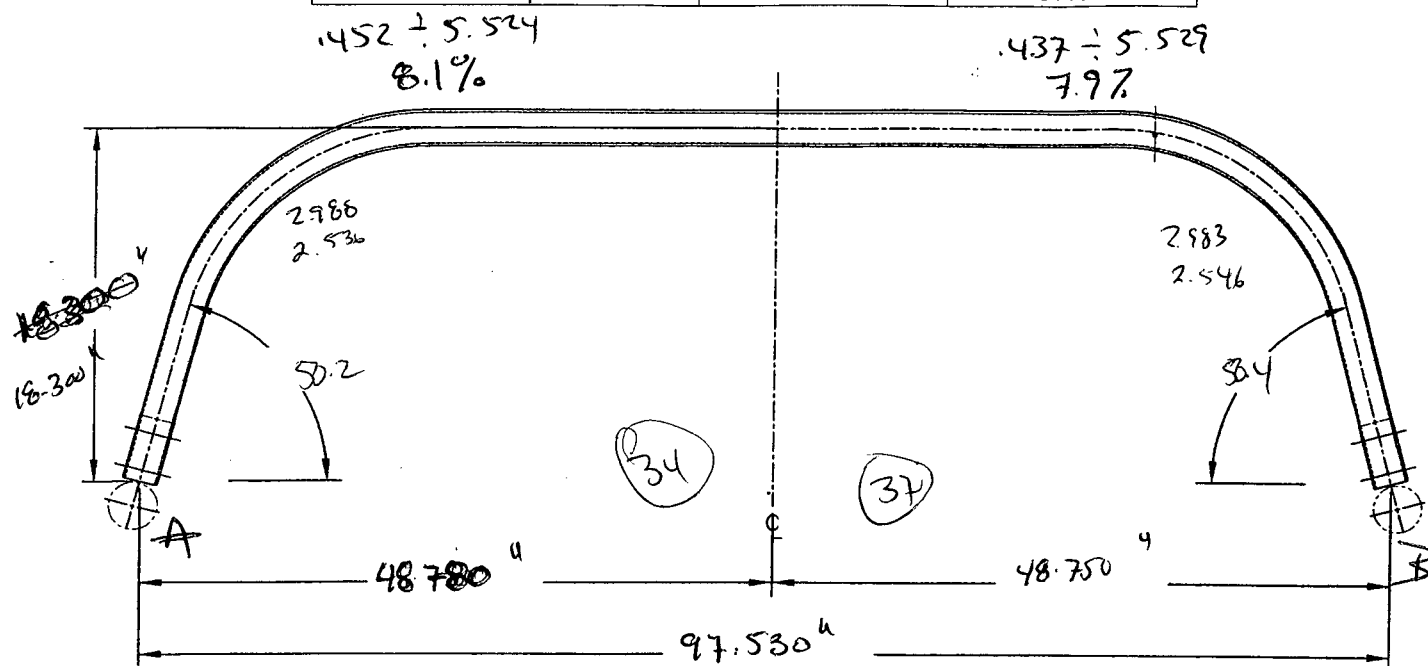
Monday, October 24, 2011 3:18:48 PM

Shop Packet Print

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DART AEROSPACE LTD		Work Order:	75542
Description: Crosstube Low Aft (205/212)		Part Number:	D212-664-207
Inspection Dwg: D212-664-247 Rev: B		Page 1 of 1	

Required Dimension	Min	Max
Height	18.16	18.42
1/2 Span	48.55	48.81
Angle	49	52
Total Span	97.1	97.62



Comments
Side A = 8.1% crush @ 34 Passes
Side B = 7.9% crush @ 37 Passes
(see note 10)

QC15 Inspection	8
Date	11/10/26

Rev	Date	Change	Revised by	Approved
A	08.02.29	New Issue	KJ/JM	
B	10.04.01	Dwg Rev updated	KJ	

Item	Qty -247	Qty -247B	Part Number	Description
1	X		D212-664-247	CROSSTUBE ASSEMBLY (205/212 LOW AFT)
2		X	D212-664-247B	CROSSTUBE ASSEMBLY (214 LOW AFT)
3	1	1	D6008-132	CROSSTUBE
4	2	2	D2940-1	SUPPORT
5	4	4	D3595-063-530	RUBBER CUSHION
6	2	2	D3860-1	CUFF
7	4	4	MS21920-28	CLAMP (OR MS21920-30)
8	44	44	CR3212-4-06	RIVET (OR M7885/3-4-06)
9	A/R	A/R	MAGNOBOND 6398	ROCKWELL SPECIFICATION RBO-120-023 ADHESIVE (TEXTRON/BELL SPEC. 299-947-100, TYPE II, CLASS 2 ADHESIVE)
10	A/R	A/R	SIKAFLEX-241/-291	SEALANT (OR PROSEAL 890 OR MIL-S-8802 CLASS B2 SEALANT)

GENERAL NOTES:

- MATERIAL: MANUFACTURED FROM D6008-132
FINISHED LENGTH = 128.268±0.020 (BEFORE BENDING/TRIMMING)
- FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
PRIME INSIDE AND OUTSIDE, PER DART QSI 005 4.2
PAINT OUTSIDE PER DART QSI 005 4.2
- TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- UNITS: INCHES UNLESS OTHERWISE NOTED.
- BREAK SHARP EDGES: 0.005 TO 0.010 MAX.
- IDENTIFICATION: SCRIBE DART PART NUMBER "D212-664-XXX" AND BATCH NUMBER ON INSIDE OF CUFF
USING VIBRATING STYLUS.
- WEIGHT: D212-664-247 = 36.6 lbs (PER IIN-D212-664)
D212-664-247B = 36.6 lbs (PER IIN-D212-664)
- PART IS SYMMETRIC ABOUT CENTERLINE.
- WHEN MACHINING TAPER, RUN CUTTER OFF PART. BLEND OUT EDGE LONGITUDINALLY, TRANSITION SHOULD
BE SMOOTH.
- BEND PROGRESSIVELY WITH A MINIMUM OF 8 PASSES. MAXIMUM TUBE FLATTENING DUE TO BENDING IS 6%
BASED ON O.D., EXCEPT UP TO 10% IS ALLOWED IN AREA NOTED.
- LIQUID PENETRANT INSPECT OUTSIDE SURFACE OF CROSSTUBE PER QSI 038.
- INSTALL D2940-1 SUPPORT USING 0.03" TO 0.05" THICK LAYER OF MAGNOBOND 6398 TO THE SURFACE OF
D2940-1 THAT WILL BE IN CONTACT WITH THE CROSSTUBE PER QSI 015. LET CURE FOR 12 HOURS AFTER
INSTALLATION AND PRIOR TO PACKAGING.
- INSTALL MS21920-28 CLAMPS (OR -30) WITH D3595-063-530 RUBBER CUSHIONS TO SECURE THE D2940-1
SUPPORT ON TOP SIDE OF THE CROSSTUBE. ENSURE CLAMPS ARE OPPOSITE OF CROSSTUBE SUPPORT.
- EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE
SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS.
DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE
UNACCEPTABLE.
- TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS SHOWING IN SAFETY AND THAT NUT HAS
NOT BOTTOMED-OUT AFTER TORQUING.
- INSTALL D3860-1 CUFF AFTER CHEMICAL CONVERSION COAT BUT BEFORE PAINT, WITH A LAYER OF
SIKAFLEX-241/-291 OR PROSEAL 890 OR MIL-S-8802 CLASS B2 SEALANT BETWEEN CUFF AND CROSSTUBE.
SEAL EDGE OF CUFF TO ENSURE NO GAPS.
- TOUCH-UP HOLES WITH CHEMICAL CONVERSION COAT.

DEO ATTACHED

09.07.28

UNDER REVIEW

RELEASED
2009-10-29

B	REVISE GENERAL NOTES/PART LIST: UPDATE TO CURRENT STANDARDS; ADD -247B (ZN C4-2, D5-2)	RF	09.09.30
A	NEW ISSUE	CP	07.07.07
REV.	DESCRIPTION	BY	DATE
DESIGN	RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF	DRAWING NO.	REV. B
CHECKED	RF	D212-664-247	SHEET 1 OF 4
MFG. APPR.	RF	TITLE	SCALE
APPROVED	RF	CROSSTUBE (205/212 LOW AFT)	NTS
DE APPR.	RF	COPYRIGHT © 2007 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	
DATE	09.09.30		

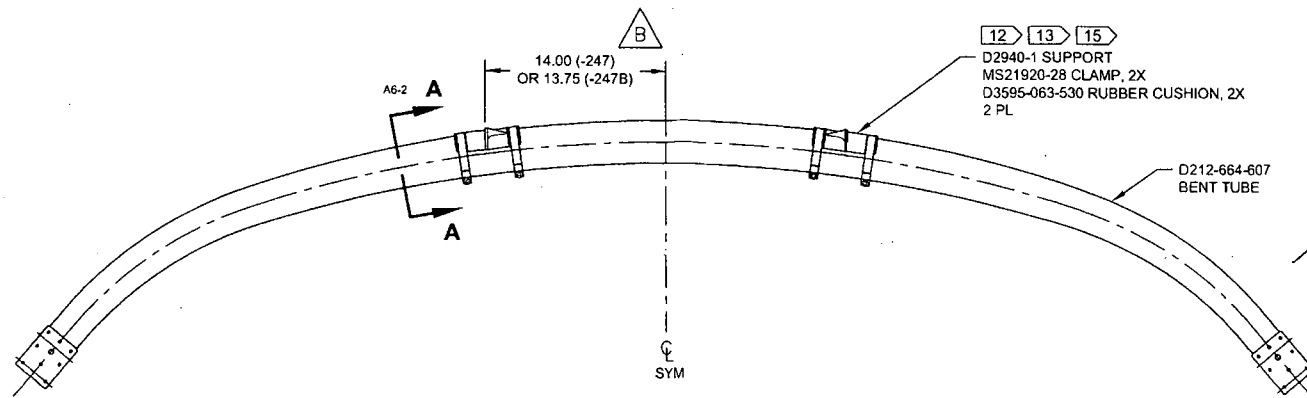
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

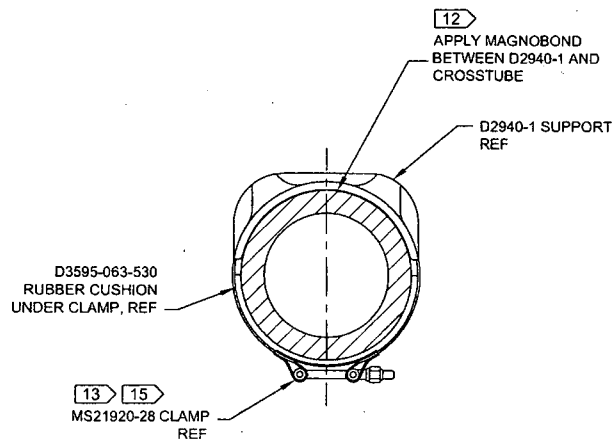
Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



**D212-664-247/247B
ASSEMBLY DETAIL**



SECTION A-A D6-2
SCALE 4X

DEO ATTACHED

DCW # 11.64
11.07.28

UNDER REVIEW

RELEASED
2009-10-29

DESIGN	97	DART AEROSPACE LTD	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	97	DRAWING NO.	REV. B
MFG. APPR.	97	D212-664-247	SHEET 2 OF 4
APPROVED	97	TITLE	SCALE
DE APPR.	97	CROSSTUBE (205/212 LOW AFT)	NTS
DATE	09.09.30	<small>COPYRIGHT © 2007 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD</small>	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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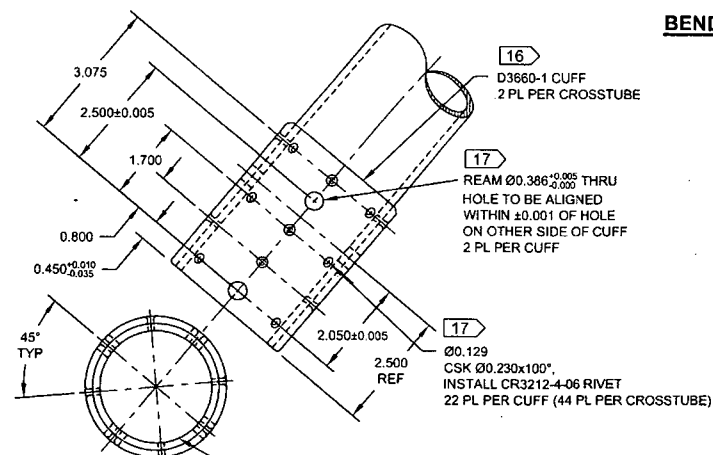
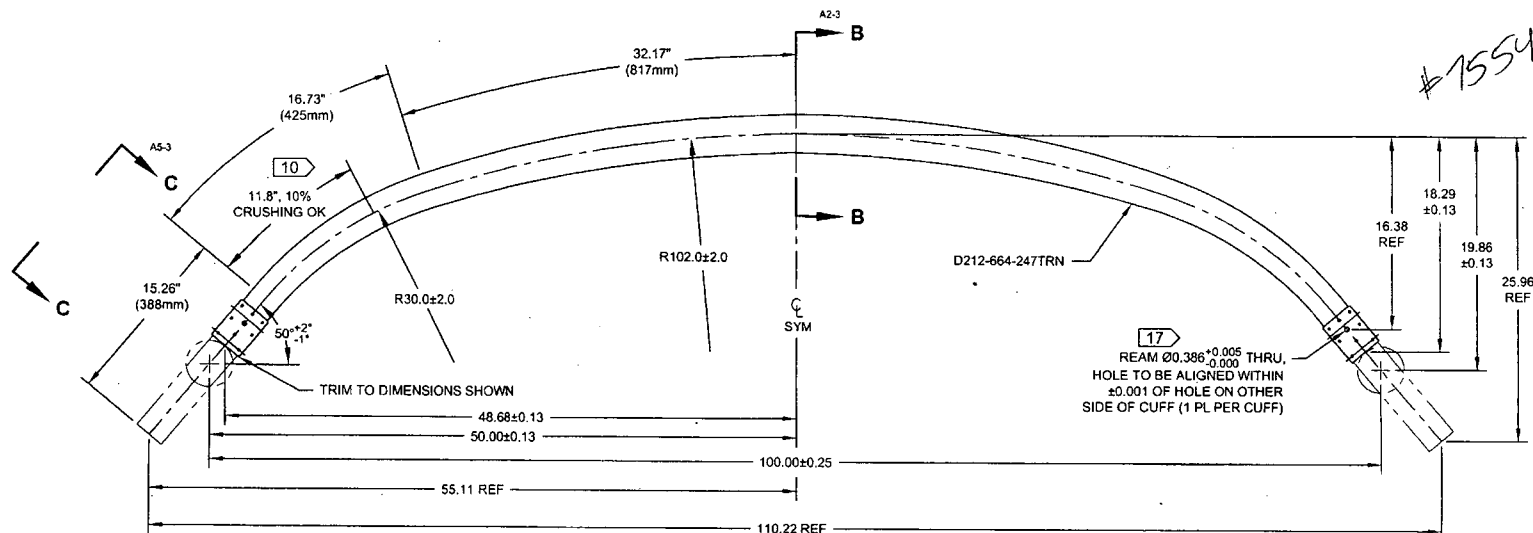
Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

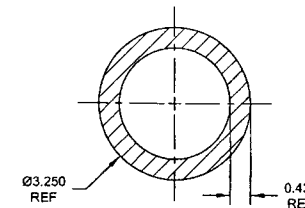
NOTE: Date & initial all entries

D212-664-607
BENDING AND DRILLING DETAIL

10 B



VIEW C-C: CUFF DETAIL D7-3
SCALE 4X



SECTION B-B D4-3
SCALE 4X

DEO ATTACHED

UNDER REVIEW

4/11.06.13

RELEASED
2009-10-29

DESIGN	97	DART AEROSPACE LTD	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	97	DRAWING NO.	REV. B
MFG. APPR.	97	D212-664-247	SHEET 3 OF 4
APPROVED	97	TITLE	SCALE
DE APPR.	97	CROSSTUBE (205/212 LOW AFT)	NTS
DATE	09.09.30	<small>COPYRIGHT © 2007 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.</small>	

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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

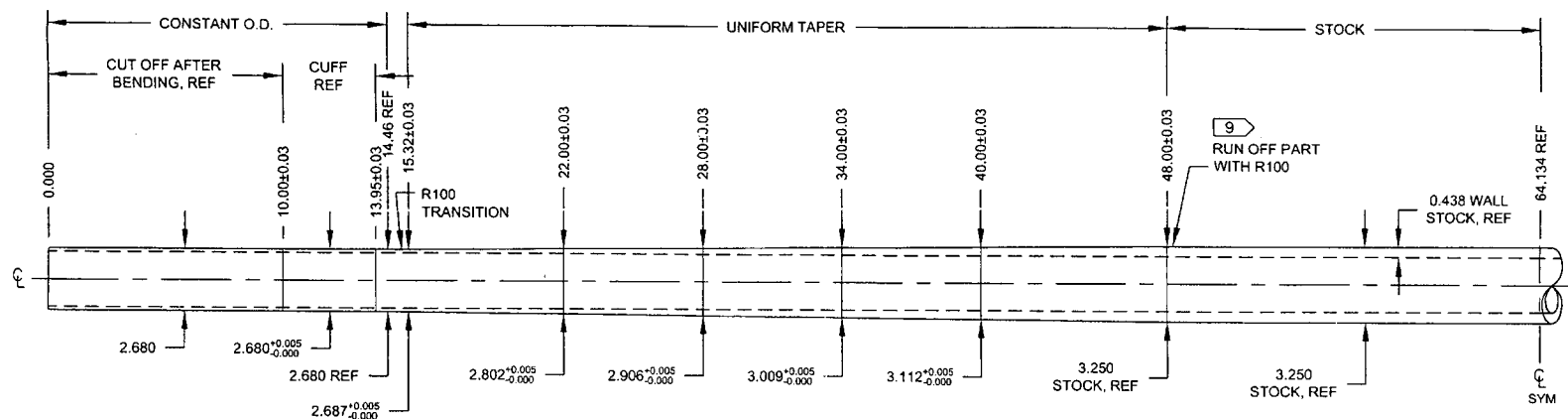
Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

8 7 6 5 4 3 2 1

75548



D212-664-247TRN
TURNING DETAIL

DEO ATTACHED

BCU 411-6 14
11.07.28

UNDER REVIEW

GP 4.28/13

RELEASED
2009-10-29

DESIGN	GP	DART AEROSPACE LTD	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	GP	DRAWING NO.	REV. B
MFG. APPR.	SS	D212-664-247	SHEET 4 OF 4
APPROVED	GP	TITLE	SCALE
DE APPR.	GP	CROSSTUBE (205/212 LOW AFT)	NTS
DATE	09.09.30	<small>COPYRIGHT © 2007 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.</small>	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

DRAWING NO. D212-664-247	TITLE CROSSTUBE ASS'Y (205 LOW AFT)	REV. B	DART AEROSPACE LTD ENGINEERING ORDER		D.E.O. NO. D212-664-247-B-1	SHEET NO. SHEET 1 OF 1	SCALE NTS
DRAWN <i>92</i>	CHECKED <i>ASS</i>	MFG. APPR. <i>AB</i>	APPROVED <i>MD</i>		DE APPR. <i>MD</i>		
DATE 11.07.15	DATE 11.07.20	DATE 11.07.21	DATE 11/07/21		DATE 11.07.21		

PURPOSE:

REPLACE MAGNOBOND WITH PROSEAL.

CHANGE:

IS:

Item	Qty -247	Qty -247B	Part Number	Description
9	A/R	A/R	PROSEAL 890 B-2	SEALANT, AMS-S-8802 CLASS B-2

WAS:

9	A/R	A/R	MAGNOBOND 6398	ROCKWELL SPECIFICATION RBO-120-023 ADHESIVE (TEXTRON/BELL SPEC. 299-947-100, TYPE II, CLASS 2 ADHESIVE)
---	-----	-----	----------------	---

NOTE 12 & 15, SHEET 1 IS AMENDED AS FOLLOWS:

IS:

12) TO INSTALL D2940-1 SUPPORT: ABRASE MATING SURFACE OF SUPPORT AND CROSSTUBE WITH 180-GRIT SANDPAPER AND REMOVE RESIDUE WITH MEK (OR EQUIVALENT). APPLY A 0.04" TO 0.07" THICK LAYER OF PROSEAL 890 CLASS B-2 (OR AMS-S-8802 CLASS B-2) SEALANT TO MATING SURFACE OF SUPPORT.

15) TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING. **PRIOR TO PACKAGING, RE-CHECK TORQUE ON CLAMPS AFTER PROSEAL 890 SEALANT HAS CURED FOR 72 HOURS.**

WAS:

12) INSTALL D2940-1 SUPPORT USING 0.03" TO 0.06" THICK LAYER OF MAGNOBOND 6398 TO THE SURFACE OF D2940-1 THAT WILL BE IN CONTACT WITH THE CROSSTUBE PER QSI 015. LET CURE FOR 12 HOURS AFTER INSTALLATION AND PRIOR TO PACKAGING.

15) TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING.

75342
RELEASED
2011-07-28
MD

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



ACUREN

RAPPORT D'INSPECTION PAR RESSUAGE

P-11198

PAGE 1 DE 2

CLIENT

Dant Aerospace

DATE

27 octobre 2011

HEURE

AM ☐ PM ☐

ATTENTION

Mme Linda Lucelle

N° TRAVAIL
ACUREN

100-11-02376

ADRESSE

1270 Aberdeen St, Hawkesbury, Ont, K6A 1K7

N° CLIENT PO/WO

175281

SITE DE TRAVAIL

Dant Usine

ACCEPTATION STD.

Asm 1417/QST 038

DATE/RÉV.

2005

PROJET

Cross-tubes inspection (Fluorescent Penetrant)

ITEM(S) EXAMINÉ

12 x Cross-tubes

DESCRIPTION DES TRAVAUX

N° PROCÉDURE

LT-002

DATE/RÉV.

2007

N° TECHNIQUE

LT-002

DATE/RÉV.

2007

N° ITEMS

See on bottom

MATÉRIEL

Aluminium

ÉPAISSEUR

Various

DESCRIPTION

Inspection 100% (Penetrant Fluorescent) on surface external on 12 cross-tubes

DÉTAILS DES INSPECTIONS

MÉTHODE :

☒ FLUORESCENT☐ VISIBLE☒ LAVABLE À L'EAU☐ MÉTHODE DISSOLVANT☐ PRÉ-ÉMULSIONNANT

MARQUE :

Magnaflux

LUM. NOIRE S/N

16440

PUISS. > 1000 µ W/CM²

☐ AMBIANT < 2 fc

PÉNÉTRANT :

Zugb ZLC67

TEMPS PÉNÉTRATION MIN.

10

MIN.

ÉQUIP. LUMIÈRE

☐ LAMP. POCHÉ☐ LAMP. CULASSE☐ PUISS. > 100 fc @ SURFACE

DISSOLVANT PÉNÉTRANT :

H2O

TEMPS SÉCHAGE MIN.

> 10

MIN.

AUTRES

Modèle LABINO

RÉVÉLATEUR :

SKD-52

TEMPS PÉNÉTRATION MIN.

10

MIN.

MÈTRE LUM. N/S

DATE CAL DUE

TYPE RÉVÉLATEUR

☒ NON AQUEUX☐ AQUEUX☐ SEC

SURFACE INSPECTÉE

CONDITION SURFACE

☐ MEULÉE☐ SOUDÉE☐ MACHINÉE☐ GRENAILLÉE☒ MÉTAL PROPRE

TEMPÉRATURE SURFACE

☐ < - 4°C / 20°F☐ - 4°C / 20°F DE 10°C / 50°F☒ 10°C / 50°F DE 52°C / 125°F☐ > 52°C / 125°F

RÉSULTATS-

☐ MÉTRIQUE ☐ IMPÉRIAL

ITEM	COORDONNÉES	RESULTAT
See other sheet for results		
11-10-28		

Étendue des Services

L'entente selon laquelle le Groupe Acuren Inc. exécute les services ne concerne que les énoncés par écrit. En aucune circonstance ces services ne s'étendent au-delà de l'exécution des services demandés. Il est entendu que toutes les descriptions, les observations et les expressions d'opinions faites par Acuren reflètent les opinions ou les observations de l'entreprise fondées sur l'information et les hypothèses fournies par le propriétaire/opérateur, et elles ne constituent pas des déclarations ou des garanties ou ne peuvent être interprétées comme constituant. Le Groupe Acuren Inc. n'assume aucune des responsabilités du propriétaire/opérateur, et le propriétaire/opérateur conserve la responsabilité entière des décisions prises en matière d'ingénierie, de fabrication, de réparation et d'usage à partir de l'information ou des données fournies par Acuren en rapport avec les services décrits dans les présentes ne peuvent excéder le coût des services rendus.

Norme de Diligence

Dans l'exécution des services, le Groupe Acuren Inc. applique le degré de diligence, le soin et la compétence normalement exercés dans des circonstances semblables par d'autres fournisseurs de ce type de services opérant dans la même localité ou dans une localité similaire. Aucune autre garantie, implicite ou explicite, n'est faite ou voulue par le Groupe Acuren Inc.

SIGNATURES

REPRÉSENTANT

Matt Murdoch

SIGNATURE

FTJ#

TECHNICIEN (SIGNATURE)

Pierre-Luc Delon

RAPPORT

RÉVISÉ PAR:

NOM (MOULÉ):

1^{ER} TECHNICIEN2^{ÈME} TECHNICIEN

NOM

INITIALES

ONGC NIVEAU

2 SNT NIVEAU

ONGC NIVEAU

SNT NIVEAU

ONGC N° REG.

12205

ONGC N° REG.



RAPPORT D'ESSAI NON DESTRUCTIF

(SUITE)

RAPPORT #

7-11198

PAGE 2 DE 2

CLIENT

Dart Aerospace

DATE

27 octobre 2011

HEURE

☒ AM

☐ PM

ATTENTION

Mme Linda Locelle

NO. TRAVAIL ACUREN

188-11-02376

RÉSULTATS

☐ METRIQUE ☐ IMPÉRIAL

Work	Order	ID	Crosstube	Item	ID	D
"	"	"	74992	"	"	D 212-664-107
"	"	"	74991	"	"	D 212-664-207
"	"	"	75277	"	"	D 212-664-207
"	"	"	754990	"	"	D 212-664-207
"	"	"	75314	"	"	D 212-664-107
"	"	"	75313	"	"	D 212-664-107
"	"	"	74976	"	"	D 212-664-107
"	"	"	72743	"	"	D 407-667-205
"	"	"	72742	"	"	D 407-667-205
"	"	"	75310	"	"	D 212-664-107
"	"	"	75540	"	"	D 212-664-207
"	"	"	75542	"	"	D 212-664-207

All the crosstubes (12) Accepted
No indication as found.

Étendue des Services

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SIGNATURES

REPRÉSENTANT
À LA CLIENTÈLE

Matt Murdoch

SIGNATURE

FTJ #:

TECHNICIEN (SIGNATURE)

[Signature]

NAME (MOULÉE):

KEENE, Luc Delbon

1^{er} TECHNICIEN

2^e TECHNICIEN

NIVEAU CGSB

2

NIVEAU SNT

2

NIVEAU CGSB

NIVEAU SNT

No. ENREG. CGSB

12205

No. ENREG. CGSB

RAPPORT
REVISÉ PAR:

NOM

INITIALES